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RECIPROCAL CROSSES BETWEEN REEVES'S PHEASANT AND THE COMMON RING-NECK PHEASANT PRODUCING UNLIKE HYBRIDS

MANY sex-linked characters have been described in birds (fowls, pigeons, canaries and doves). The pheasant hybrids to be described, however, show merely a different appearance of male sexual plumage characters in the F_1 hybrids of a reciprocal cross between Reeves's pheasant and the common ring-neck pheasant (*P. torquatus*). These hybrids are sterile, and therefore the experiment ends with the first cross, although Cronau¹ stated that the offspring from a Reeves's cock and common pheasant hen were occasionally fertile. Poll,² however, who studied the spermatogenesis of numerous pheasant crosses, found the hybrids between Reeves's and the common pheasants and between Reeves's and Sommerings's pheasants always sterile.

The Reeves's pheasant was originally given generic recognition by Wagler under the name *Syrmaticus reevesi*. This distinction it certainly deserves, although later writers have often placed it under *Phasianus*. The ring-neck pheasant, so called, refers to the common stock pheasant which is now practically pure *torquatus*.

In the fall of 1911 two hens were mated as follows: Pen D contained a ♂ Reeves's with two ring-neck hens; pen H a ♂ ring-neck with two Reeves's hens. These were all birds of the season. The Reeves's were from the same clutch of eggs from a single pair, and the ring-necks from a strain of which large numbers have been bred on the farm. The Reeves's never, to my knowledge, shows any variation of plumage in captivity. The strain of ring-necks is practically constant, though the white neck ring sometimes differs in its width.

It is therefore fair to suppose that the somatic difference of the hybrids to be described is a constant feature, although from pen D only two males were reared to maturity, and from pen H only four. The six birds, however, immediately fall into two classes. They have all the appearance of two well-marked species. Hens were reared only from pen H.

¹ Cronau, C., *Zool. Garten.*, 1899, p. 99.

² Poll, H., *Gesellschaft Natur.-Freunde*, 1908, p. 127.

A large number of eggs from these two pens was set, but from pen D only five chicks were hatched; from pen H, ten. These two lots of chicks were noted as differing both in down and in first plumage in the following way: those with the Reeves's father and ring-neck mother, pen D, were lighter-colored than the birds of the reciprocal cross. No detailed observations were made. On maturity this same difference was found to hold. On comparing the adult specimens dorsal side up, there is at once seen to be a constant difference involving all the feather regions. In general, it may be said that in cross D the Reeves's father transmitted to his hybrid offspring more of his own characters than the female Reeves's transmitted to her offspring in cross H. This is especially shown in the almost pure Reeves's head pattern of cross D, and in the general lighter tone of the whole upper parts and flanks.

On the other hand, the stronger tail barring of Reeves's pheasant, as contrasted with the ring-neck, has been transmitted to cross H by the Reeves's hen, and has not been carried to the same extent by the male Reeves's in the other cross.

The plate shows the difference, and needs no explanation. The other differences are briefly as follows:

Cross D, feathers of mantle with reduced and irregular black band.

H, feathers of mantle with broad black band.

D, feathers of mantle tending to sub-terminal bar of buckthorn brown (Ridgway, 1912).

H, brown bar absent.

D, general color of mantle more tawny and less dark than in H. Back and rump much lighter than in H, with also an entirely different feather pattern. Upper tail coverts lighter in D than in H. Barring of tail reduced in D to basal third and not heavy. In H, heavy barring of whole tail, becoming blotchy and obscured towards terminal third.

Scapulars, greater and lesser wing coverts, and even primary quills different in the two crosses; and tending to more rich browns and larger light areas in D than in H. First primary with larger and more distinct light bars on inner web in D than in H.

Flanks lighter and with tawny sub-terminal bars in D, which are not present in H.

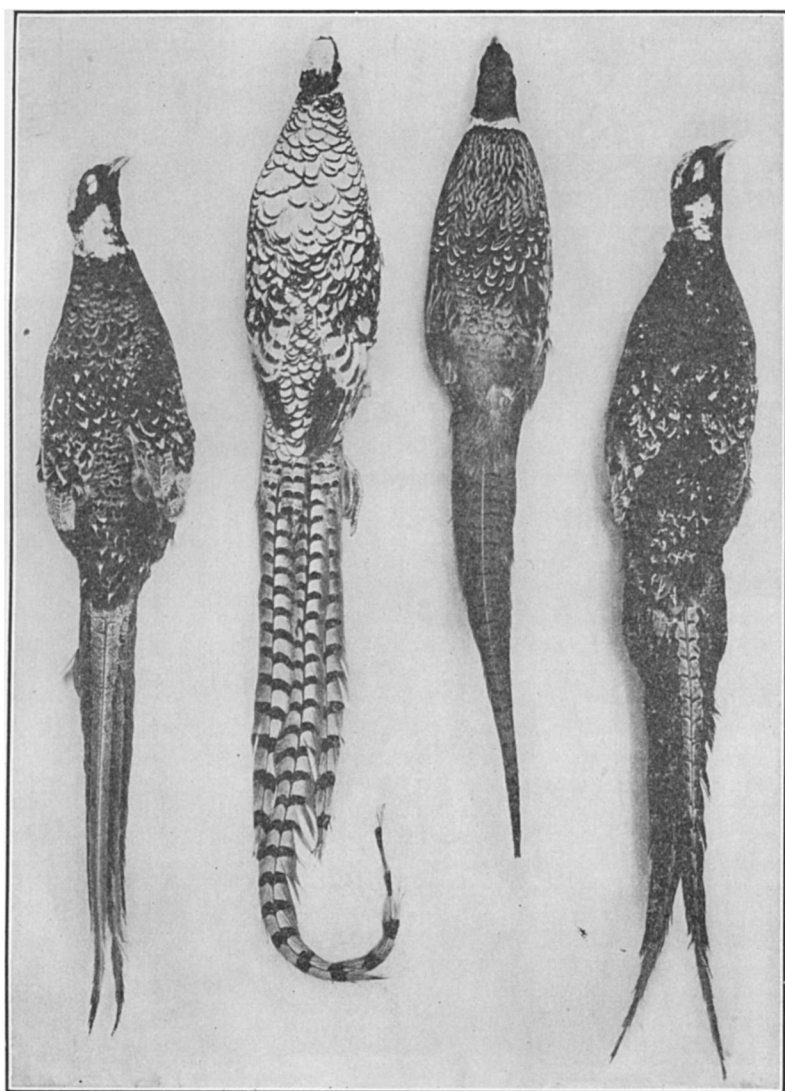


FIG. 1. Male hybrid from a mating of a male Reeves's with a female ring-neck pheasant.

FIG. 2. Male Reeves's pheasant.

FIG. 3. Male ring-neck pheasant.

FIG. 4. Male hybrid from a mating of a male ring-neck with a female Reeves's pheasant.

Breast and lower throat slightly darker in H than in D, but very similar. Rest of lower parts about the same in both crosses.

Three hen birds were reared from pen H. They all showed strong tail barring and other well-marked Reeves's characters.

The females of the two species involved are quite different, and it is therefore to be regretted that there are no specimens from both crosses for comparison.

SUMMARY

That this somatic difference between reciprocal crosses in other pheasants is not always present, is shown by the uniform F₁ generation in the two crosses, Amherst \times Gold, of the genus *Chrysolophus*, bred by myself. In the work of Professor Alessandro Ghigi and Mrs. Haig-Thomas on pheasants no reciprocal crosses have apparently been made.

The significance of the present case is not clear, and it is desired simply to put it on record. Further work is necessary to prove that reciprocal crosses between Reeves and the true pheasants always give different results.

It is interesting to note that the differences which have been described are rather subtle ones and quantitative rather than qualitative.

JOHN C. PHILLIPS